AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

Claims 1-15. (Cancelled)

16.   (Currently Amended) A specified pattern detection apparatus comprising:

a plurality of filters provided for detecting an image ~~detection~~ at a first resolution;

an extractor which extracts a specified pattern included in ~~an~~ the image with use of a combination of filters in said plurality of filters to determine a position of the specified pattern; ~~and~~

a circuit for generating an image of the specified pattern at a resolution lower than the first resolution; and

a calculator which determines the position of the specified pattern more precisely than said extractor, based on the position determined by said extractor and the lower resolution image.

17.   (Currently Amended) ~~The~~ A specified pattern detection apparatus ~~according to claim 16, further~~ comprising:

a plurality of filters provided for image detection;

an extractor which extracts a specified pattern included in an image with use
of a combination of filters in said plurality of filters to determine a position of the
specified pattern;

a calculator which determines the position of the specified pattern more
precisely than said extractor, based on the position determined by said extractor;

a binarizer which binarizes input image data to provide bi-level image data;

an image extractor which extracts specified partial images included in the
specified pattern, in the bi-level image data obtained by said binarizer; and

a reduced image generator which generates a reduced image of an image
including the specified partial images, the reduced image having a lower resolution
than the image including the specified partial images;

wherein said extractor extracts the specified pattern included in the reduced
image generated by said reduced image generator.

18.   (Previously Presented) The specified pattern detection apparatus
according to claim 16, wherein the filters in the combination of filters are positioned
along a circumferential line.

19.   (Previously Presented) The specified pattern detection apparatus
according to claim 17, wherein the filters in the combination of filters are positioned
along a circumferential line.

20.   (Previously Presented) The specified pattern detection apparatus according to claim 16, wherein the plurality of filters are provided for extracting a plurality of types of specified patterns.

21.   (Previously Presented) The specified pattern detection apparatus according to claim 17, wherein the plurality of filters are provided for extracting a plurality of types of specified patterns.

22.   (Currently Amended) A method for detecting a specified pattern comprising the steps of:

extracting a specified pattern included in an image of a first resolution with use of a combination of filters in a plurality of filters provided for image detection and determining a position of the specified pattern; and

generating an image at a resolution lower than the first resolution of the specified pattern; and

further determining the position of the specified pattern more precisely based on the determined position and the lower resolution image.

23.   (Currently Amended) The A method according to claim 22, further for detecting a specified pattern comprising the steps of:

extracting a specified pattern included in an image with use of a combination of filters in a plurality of filters provided for image detection and determining a position of the specified pattern;

further determining the position of the specified pattern more precisely based
on the determined position;

binarizing input image data to provide bi-level image data;

extracting specified partial images in the bi-level image data; and

generating a reduced image of an image including the specified partial

images, the reduced image having a lower resolution than the image including the

specified partial images;

wherein the specified pattern is extracted in the reduced image.

24.   (Currently Amended) A specified pattern detection apparatus

comprising:

a binarizer which binarizes input image data to provide bi-level image data;

a storage device which stores the bi-level image data obtained by said

binarizer;

a partial image extractor which extracts specified partial images in the bi-level

image stored in said storage device with a filter for conversion;

a gain calculator which calculates and stores information for each pixel in the

bi-level image, in which the specified partial images are extracted, with a gain filter,

the information representing a distance from the each pixel to the specified partial

image;

a position calculator which calculates ideal positions of the partial images to

be included in a specified pattern; and

a gain output device which outputs a gain on the ideal positions based on the

information obtained and stored by said gain calculator.

25.   (Previously Presented) The specified pattern detection apparatus according to claim 24, wherein said conversion filter converts the partial image stored in said storage device to 1-bit data.

26.   (Previously Presented) A method for detecting a specified pattern comprising the steps of:

binarizing input image data to provide bi-level image data;

storing the bi-level image data;

extracting specified partial images in the bi-level image stored with a filter for conversion;

calculating and storing information for each pixel in the bi-level image, in which the specified partial images are extracted, with a gain filter, the information representing a distance from the each pixel to the specified partial image;

calculating ideal positions of the partial images;

outputting a gain on the calculated ideal positions based on the information obtained by said gain calculator.